

SOME IMPORTANT POINTS IN THE RAPID HEALING, COMPLETE RESTITUTION OF FUNCTION, AND LOW MORTALITY IN SUPRAPUBIC PROSTATECTOMY CASES.

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Since urologists have, during the past ten years, built up a system of procedure which has made possible the restoration of health and function to the patient and the adding of years of comfort to his life, so that he need no longer be subjected to a life of suffering coupled with impaired physical and mental activity and in many cases early death, I hold it to be our duty to correct any mistaken impression that may exist among some of the laity, that prostatectomy is a dangerous operation and leaves the patient impotent, a dribbler, or with some unhappy sequelae; because the simple, shockless procedure of suprapubic prostatectomy may be unhesitatingly recommended as a cure for this condition.

DISCUSSION by Louis Clive Jacobs, *San Francisco*; Robert V. Day, *Los Angeles*; Jay J. Crane, *Los Angeles*.

PREPARATORY TREATMENT—In one of my first papers on prostatectomy, read about nine years ago, I stated that the most important part of the prostatectomy was the preparation, and my experience since that time has confirmed that belief.

PROGNOSIS—A markedly emaciated patient is a poor risk, regardless of otherwise brilliant findings. I also draw the line on imbeciles, the bedridden and advanced tabetics. I believe that in the past we have been too narrow in our determination of fit surgical risks. We have been inclined to place our whole trust in the kidney function and blood chemistry findings, with a tendency to ignore a weakened myocardium, general debility, malaise, blood pressure, infectious and other complications, such as fistula in ano, carbuncle, bed sores, obesity with broken heart compensation and pyelonephritis. Such conditions must be relieved before operation. I do not operate upon a patient until or unless he is feeling good. I have not found high blood pressure up to 250 systolic to be a contra-indication to operation. A patient with a very low pressure should be carefully checked up. His vitality is low.

NURSING—The selection of competent, trustworthy nurses, is all important, not merely from the standpoint of morbidity, but from that of mortality as well. The urologist should provide himself with a sufficiently large list of reliable nurses of good character, or all of his good work may be for naught.

DIAGNOSIS—The more common mistaken diagnoses that have been referred to me for prostatectomy have been stricture, contracture of the bladder neck, acute and chronic prostatitis, tuberculosis of the bladder, bladder calculus, diverticulitis. Combination of prostatic tumor and stricture or prostatitis I have found to be not so rare, and unless these coincident conditions are first relieved the prostatectomy will either not cure the patient, or convalescence will be more or less indefinitely postponed.

CONSULTATION—I have found it a most excellent arrangement to have associated from the beginning of the treatment an internist. His counsel in a number of cases has proved invaluable.

GASTRO-INTESTINAL—Hygiene is of prime im-

portance. I have had several cases of fecal impaction, resulting from the extreme protrusion of the tumor into the rectum. In these cases the enema fluid will frequently not return, but must be syphoned away. To relieve these cases I employ oil enemas, flaxseed tea, castor oil, cascara, and other laxatives and cathartics. Unless the bowel has been thoroughly cleansed and regulated, a stormy convalescence is the rule. A high saline enema is frequently given daily. Cathartics are administered before breakfast, so that the patient's sleep will not be troubled. Charcoal tablets are administered thrice daily. Abdominal massage, walking, and easy physical exercises are prescribed.

HAEMOSTATIC—(1) Calcium lactate gr. XX t. i. d. for three days preceding the prostatectomy.

(2) Two cups of fruit gelatin daily for three days prior to operation.

(3) Fibrinogen—one or two ampoules subcutaneously the night before operation. Two ampoules one hour before operation. I also employ fibrinogen to adjust coagulation time of the blood when necessary.

(4) Spinal anesthesia. It lowers blood pressure and delays muscular contraction of the traumatized tissues.

CARDIAC—Endocarditis, provided compensation can be established, is by no means a contra-indication to operation. A myocardial weakness, however, that does not readily respond to digitalization is a treacherous condition. It is better for such a patient to lead a catheter life, or at any rate to dispense with operation. *Digitalization*: I utilize digalen one ampoule intravenously t. i. d., or digifoline one ampoule subcutaneously t. i. d.

TONICS—Aside from the old standard, elixir of iron, quinine and strychnine, I have achieved good results with cod-liver oil preparations in building up the patient's health, and I believe also in specifically increasing his resistance to infection and other complications that the asthenic may be exposed to. Containing as it does 400 times as many vitamins as any other preparation, is it not probable that we have too often failed to bear in mind the efficacy of this drug? Calcium chloride is a cell tonic and eliminant, and I frequently administer three grains intravenously once daily.

GENITO-URINARY PREPARATION—A bladder that contains more than 200 cc. of residual urine should be emptied fractionally, and an indwelling catheter inserted. Daily instillations of argyrol or irrigations of silver nitrate, mercurochrome, or boric acid are administered, according to the degree of infection and the tolerance of the patient, the object being to reduce congestion, infection, and sensitiveness of the bladder, and particularly of the prostate and trigonal region, in order to lessen the kidney reflex that occurs at the time of prostatectomy. *Fluids* are only moderately increased in quantity, since I have found it necessary to safeguard the myocardium as well as the kidneys. *Cystoscopy*: This procedure should be preceded by administration of acid sodium phosphate and hexamethylenamin for several days, and these drugs should not be left out of consideration in the preparatory and after treatment of those patients predisposed to pyelonephritis. If practicable,

an indwelling catheter is utilized for several days preceding suprapubic cystotomy.

ANESTHETIC—I prefer gas oxygen for the first stage, and spinal for the second stage. Some patients demand to be put to sleep for the second stage, and to these I administer gas oxygen or, if the prostate is very deeply situated, ether. I object to local anesthesia because it tears tissues, thereby reducing their resistance to infection. I have never seen any untoward result due to gas-oxygen anesthesia. Parasacral anesthesia is not adequate for suprapubic work. I have found a spinal anesthetic of from one and three-quarter to two and one-half grains of novocain, ideal in all cases except those with low blood pressure. To the latter named I give a general anesthetic. Spinal anesthesia justly deserves the high place that it holds in this operation, because it prevents hemorrhage by lowering blood pressure and by allowing the prostatic cavity and the muscles surrounding it to remain at rest for some hours following the operation. By this means it also minimizes what little pain might otherwise ensue; and also blocks any immediate renal reflex, and I believe minimizes shock by blocking many other reflexes. The patient partakes of eggnog every three hours following the operation, instead of suffering from nausea and vomiting, as may be the case after a general anesthetic. I once asked Mrs. Greer, head nurse in the urological department of the Los Angeles County Hospital, to what she attributed the excellent results that we were having with our prostatectomy cases. Her instant reply was: "Doctor, I feed my patients. I give them plenty of eggnog on the day of operation and thereafter." Some time ago I walked through the urological ward of our General Hospital and noticed a patient upon whom I had performed a prostatectomy three hours previously under spinal anesthesia. He was sitting up in bed, with a writing board on his lap and a pencil cocked back of his ear. He was folding a letter which he had just written, setting forth the happy outcome of his operation.

ONE-STAGE VERSUS TWO-STAGE—My results with the one-stage have been as good as with the two-stage in selected cases, and when I have taken care of the cases personally. The absolute indications for a two-stage operation I hold to be:

- (1) Bladder or kidney calculus.
- (2) Acute vesical retention.
- (3) A stubborn cystitis.
- (4) Intolerance to the indwelling catheter.
- (5) A prostatic tumor of enormous proportions.

In spite of the fact that my results and mortality with the one-stage operation have compared most favorably with those of the two-stage, and, although a patient occasionally dies after the preliminary cystotomy, an exitus that would have been illogically charged to the one-stage operation had prostatectomy been performed at that time, I am nevertheless leaning more to the two-stage operation for the following named reasons:

- (1) A more complete bladder drainage is obtained than by urethral catheter drainage.
- (2) Less shock at the second operation.
- (3) There is not so much likelihood of perivesi-

cal infection, although I think that all of us have encountered malignant infections that persisted in boring pockets following even the two-stage operation.

(4) Less congestion and swelling of prostate, due to absence of the irritating indwelling catheter. Less edema of bladder neck.

(5) No absorption of the occasionally very toxic urethral pus caused by the irritation of the catheter.

(6) Bladder is kept freer from infection.

(7) Less likelihood of epididymitis.

OPERATIVE—After the patient has been thoroughly prepared and stabilized, the important consideration is to remove the prostate with as little shock as possible. For this the suprapubic operation is ideal, in that it rarely requires more than seven minutes for its performance.

OPERATION—FIRST STAGE—After exploring for stones in bladder or in diverticulae and for papillomata, etc., a sufficiently stiff one-half inch rubber drainage tube is introduced into the upper posterior wall of the bladder, and tightly secured by a purse string or other suture. The prevesical fascia is brought together with No. 1 continuous gut. In peeling up the peritoneum, care is taken not to separate the bladder from its anterior attachments to pubis and muscle. This requires some gentleness, but is worth the effort. Rectus fascia is sutured with *interrupted* No. 3 catgut to prevent hernia. Fascia and skin are sewn loosely around tube to insure free drainage of serum. Pezzer catheters get pinched, kink and tear, and their caliber is not large enough. I have never used them to any extent.

OPERATION—SECOND STAGE—The entire surface of the suprapubic opening is sharply curetted. I stretch the incision very little on account of the possibility of tearing the peritoneum. The incision is continued downward and if necessary a rectus muscle with its sheath is cut transversely, each to be carefully sutured with interrupted sutures later. After enucleation the rim of the bladder incision is freed from the rectus muscles and tightly sutured around a one-half-inch rubber tube, after which the muscle and skin are sutured separately. It is necessary to free the skin from its deeper adhesions before suturing it with the marine stitch. It is to this thorough method of suturing that I attribute the rapid healing and dry condition of the patient during convalescence. During the past two years several nurses have remarked that my cases remain clean and dry, "just like abdominal cases." *Hemostasis*: During the past ten years I have not seen fit to modify my procedure of tightly packing the entire bladder of those rare cases that bleed on the table, or of those cases that have tumors of such large size that they are potential bleeders and likely to bleed later on, even though they remain dry on the table. The pack is removed fractionally every three hours during twelve to eighteen hours. Of course, there is no room for a tube when the bladder is tightly packed. When the pack is removed, an indwelling catheter is inserted in the urethra. Pituitrin, in addition to being supportive, is also hemostatic.

POST-OPERATIVE TREATMENT—Frequent sips of

hot water, later water of room temperature. Pituitrin every four to six hours for several days. Digifoline thrice daily when that support is indicated. Morphine grains one-eighth plus atropine grains one-three hundredth if there is pain. Egg-nog every three hours. Sitting position a few hours after operation, with occasional changes of position. *Enemas* and colon tube as soon as there are any gas pains. An enema is soothing and affords great relief from the pressure of gas-filled bowels upon the sore bladder. *Oliguria*: One thousand cc. intravenously of soda and glucose solution daily. Diuretin twenty grains thrice daily. The administration of 2000 to 3000 cc. of intravenous solution daily to elderly individuals will, I am sure, in a fair percentage of cases break down myocardial compensation, as will also the administration of a large amount of fluid by mouth. Myocardial weakening is the most treacherous complication that can occur, and the surgeon who can keep the myocardium in a stabilized condition will have the lowest mortality. *Pernicious hiccup* is stopped by hypodermics of morphine and atropine every two hours. *Hemorrhage*: A 5 per cent mixture of aluminum acetate in water is the most effective local injection. If this does not control, the bladder must be packed under an anesthetic. I have never found it necessary to pack a bladder post-operatively. Lately I have found fibrogen a valuable remedy. *Irrigations*: I frequently do not irrigate the bladder till the second or third day following operation, and then only with boric acid in the morning, supplemented by an instillation of 5 per cent argyrol in the evening. Instead of every day disturbing the sore prostatic pouch, which is doing its best to get along, I affect a compromise by having the nurse irrigate the drainage tube and bottle instead twice daily with mercuric chloride solution. This, together with keeping the suprapubic tube and incision carefully cleansed with alcohol does, I am sure, contribute to the freedom of infection which many of my patients have enjoyed. Cleanliness is next to Godliness, and its rigid application in these cases must be insisted upon to the same degree in which it is applied by the orthopedic surgeon. *Infection*: Infection in the prevesical space yields to swabbing with tincture of iodine and, if necessary, frequent instillations of mercurochrome 1 per cent. Infection of the prostatic pouch is treated by irrigations of silver nitrate, acriflavine, and instillations of 10 per cent argyrol. Pyelonephritis is treated by the usual methods and intravenously with 20 cc. of 1 per cent mercurochrome solution. My experience with mercurochrome intravenously in acute infections has caused me to regard it as one of the most valuable drugs that have been added to our list in a long time. It has been some years since I have had a sloughing wound in private practice, even in those cases complicated by stone. Careful operative technic, aseptic and antiseptic measures are responsible for this. It has been my observation that it is the germs that are brought in from the outside, and not those already there that do the damage. *Healing*: The small sharp curette is an invaluable instrument for removing redundant tissue and for freshening the suprapubic opening. Its discriminating use is an important factor in rapid healing in some cases.

Necrotic fat or other tissue should be promptly removed with a long thumb forceps. *Fever* is most commonly due to constipation and less commonly to infection.

GOING HOME too soon causes epididymitis, due to the many added strains that the patient is tempted to assume as soon as he arrives there. A few added days of sitting in a chair, with but little walking around the hospital, is the best for the patient. As soon as he begins to walk he should wear a scrotal suspensory and continue to do so for several months. Patients with high blood pressure must be cautioned against overeating and overwork. Their blood pressure should be watched and controlled.

PNEUMONIAS, although rare, I have seen occur almost as frequently in those who were undergoing preparatory treatment as in those who had been operated upon. I have seen almost as many patients develop pneumonia following spinal as following ether or gas anesthesia. I believe that an infected environment, plus hypostatic congestion, play a far more important role than does the irritation of an ether anesthetic, although I do attribute one of my exits to this cause.

RESULTS—I have had one case of impotence following prostatectomy. After one year, however, the potency in this 67-year-old patient had improved to a condition better than that of the average man of his age. Recently I had a case of troublesome paresis of the bowel that persisted for four days following a spinal anesthetic. Since this condition, however, may occur after any pelvic operation, regardless of the type of anesthetic used, it would be unfair to discriminate against spinal anesthesia on this account. Dr. Crane at the Los Angeles County Hospital, in checking up on the residual urine of eighty-six patients before they left the hospital, found that 3 per cent had residual urine of as much as three ounces, 10 per cent about one ounce, and the remaining 87 per cent had none at all.

My first Los Angeles prostatectomy, performed almost nine years ago, is still living and in good health.

CANCER—Some four years ago I inaugurated the procedure of partial suprapubic prostatectomy for cancer of the prostate. I reported two cases. Inquiry today revealed that they are both in fair shape. One of them was operated upon four and one-half years ago, and is under the care of Dr. Granville MacGowan; the other was operated upon five and one-half years ago. Some time ago, having had the co-operation of Dr. Percy in some work on cancer of the bladder, I was impressed with the probable good results that could be achieved by the cauterized method in cancer of the prostate. I have employed the method in several cases lately, and am inclined to believe that, by burning out the whole prostatic mass with the cauterized and supplementing this by radium later on, we have the best procedure for attacking this condition. The operation is tedious, requiring sometimes two hours, the technic being to keep on burning until the *soft* surrounding tissues are felt.

MORTALITY—As has been so aptly stated: "Put a hundred men, varying from 60 to 95 years of age,

to bed for a few weeks and it need occasion no surprise if one or several of them die from something or other, even though no operation is performed." Taking this fact into consideration, urologists must congratulate themselves all the more for the very low mortality that they have been able to maintain in suprapubic prostatectomy—ranging from one-fourth of 1 per cent to 5 per cent. During a six months' service at the Los Angeles County Hospital a year and a half ago, I operated upon thirty-three unselected cases, some of whom appeared to be rather poor risks, but all of them recovered, a result due largely to the alertness and painstaking care of Dr. J. J. Crane, resident urologist. Gardner has reported 240 consecutive suprapubic prostatectomies, without a death. I have not had a death in private practice in about three and one-half years. Since urologists have, during the past ten years, built up a system of procedure which has made possible the restoration of health and function to the patient and the adding of years of comfort to his life so that he need no longer be subjected to a life of suffering, coupled with impaired physical and mental activity and, in many cases, early death, I hold it to be our duty to correct any mistaken impression that may exist among some of the laity that prostatectomy is a dangerous operation and leaves the patient impotent, a dribbler, or with some unhappy sequelae; because the simple, shockless procedure of suprapubic prostatectomy may be unhesitatingly recommended as a cure for this condition.

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DISCUSSION

LOUIS CLIVE JACOBS, M.D. (Flood Building, San Francisco)—Dr. Rosenkranz's paper is a valuable contribution to modern surgery of the prostate. It deals with a large number of procedures which are essential to the complete recovery of the patient. For when all is said and done, an operation for the removal of the prostate is not a therapeutic success unless the candidate is in good physical condition, say, three months following the prostatectomy. To achieve this result, is the ambition of every urologist. Hence, we see the importance of the preliminary treatment and preliminary investigations.

I make a routine cystoscopic examination, roentgenological examination, complete blood examinations, with estimation of the blood urea and a urine examination in every case. Blood creatinin is a valuable index of the kidney function, but the laboratory estimation of the same is unreliable on account of the variation of the colorimetric reading with a standard that is unstable.

In regard to the fractional emptying of the bladder and the insertion of the indwelling catheter, I am heartily in accord with what the doctor states. Recently, I saw a patient in consultation, from whom a very large amount of urine had been withdrawn at the first catheterization. This was followed by a hemorrhage, and shortly afterward the patient died from anemia of the heart muscle.

There has been a noticeable decrease in the mortality from prostatectomy in late years, especially in urological services under the supervision of genito-urinary surgeons, such as Dr. Rosenkranz. This is due, I believe, to the determination of the surgical risk and the minute and painstaking attention and care given to the pre-operative and post-operative phases of the surgery.

As regards the choice of the one or two-stage operation, I am a strong advocate of the single-stage procedure. Usually it can be advantageously performed, though there are some exceptions where the two-stage method should be done. The suprapubic approach reduces the post-operative complications, such as fistulae

and impotence, to a minimum, and is, therefore, the procedure to be preferred. There should be a minimum of time consumed in the actual removal of the prostate, and in my experience the anesthetic of choice is "gas and oxygen." My patients are usually conscious within five minutes of the tying of the last suture. Sodium citrate solution should be administered per rectum immediately, and fluids in moderate quantities fed through the mouth. As a safeguard against embolism, nothing should be administered per rectum after twenty-four hours have elapsed.

The following points in the doctor's operative technic are of prime importance and, to my mind, cannot be too forcefully mentioned:

Not to separate the bladder from its anterior attachments.

Incise into the high part of the bladder.

The doctor's methods for controlling hemorrhage and for draining the bladder are excellent. I pack all my cases with three-inch gauze, and allow it to remain to the third day. Occasionally, I place a tube alongside of the gauze. I never insert a catheter into the urethra until at least ten days have elapsed, and sometimes not until three weeks. If I encounter severe hemorrhage during the operation, I aspirate with the air-suction aspirator inserted into the wound and, with the bladder wall retracted, suture the capsule of the prostate.

The pharmaceutical preparations enumerated by Dr. Rosenkranz are all of great assistance in sustaining the patient, and should be used wherever indicated. Just two more drugs, I believe, deserve mention, and those are camphorated oil and caffeine.

As regards residual urine, following the removal of the prostate, this is almost always due to tags of prostatic capsule or small portions of adenomatous tissue lying in the posterior urethra, and it would be necessary in these cases to fulgurate them through the cysto-urethroscope.

ROBERT V. DAY, M.D. (412 West Sixth Street, Los Angeles)—Doctor Rosenkranz has given us a very complete and most excellent discussion of prostatism and its cure. Everyone must agree with him that the preparation of the patient is the most important part. In the bad risk I prefer the two-stage operation. With the younger patients—say under 70—without evidence of serious cardio-circulatory disturbance or irreparable damage to the kidneys by reason of the long-continued back-pressure, the one-stage operation is probably the one of choice. We control bleeding in the one-stage operation by suturing the posterior lip of the bladder neck, followed by the use of the Pilcher bag. With the two-stage operation, however, it is difficult to suture the bladder neck, and we rely entirely on the Pilcher bag. The bag causes much less distress than gauze packing.

In the main, I agree most heartily with Doctor Rosenkranz. However, I am opposed to indiscriminate medication, such as bitter iron tonics, diuretin, urotropin, calcium chloride, etc., because they are apt to upset the patient's digestive apparatus. (Digitalization is frequently necessary.) Iron and vitamins are so abundantly present in spinach, egg-yolks, and milk that such medication would seem superfluous. Water, lemonade, fruit juices, and buttermilk are the best urinary antiseptics and diuretics. Enemas often cause tenesmus and are occasionally responsible for the dislodging of a clot with resulting pulmonary embolism. Unless the patient is in great shock I never give intravenous salt, glucose, or sodium bicarbonate, for the reason that most of these men have emphysema and chronic bronchitis, and large amounts of these substances perhaps favor pneumonia. Sodium bicarbonate, after sterilization by heat, contains a considerable amount of sodium carbonate, and almost always causes a severe chill or reaction. Hemostatics are not necessary if the bleeding is properly controlled by suture and hemostatic bag.

Spinal anesthesia is invaluable in a majority of suprapubic prostatectomies. It got a bad name when the anesthetic agent used was stovain—a very toxic and dangerous drug for spinal anesthesia. We have records of over 5500 cases of spinal anesthesia used in the Los Angeles General Hospital since 1910 on the urologic and

rectal services, and many hundreds prior to 1910. The anesthetic agents in this series were tropacocain and novocain, either one of which is satisfactory.

JAY J. CRANE, M.D. (Westlake Professional Building, Los Angeles)—Dr. Rosenkranz's paper is very complete. He has dealt with all the different points very thoroughly that lead to a low mortality, and the complete restitution of the patient operated upon for prostatism. Dr. Rosenkranz has had a wide experience, and the results he has had I know have been excellent, for I have seen many of his patients cured and out of the hospital in four weeks, and I am glad to have him put down in writing the things he pays particular attention to, so that we can follow his suggestions.

It is routine at the Los Angeles General Hospital to do a roentgenological examination of the urinary tract, a complete blood chemistry, a complete urinalysis, kidney efficiency test with phenolsulphonephthalein and a bladder cystoscopic, besides the routine physical examination, which includes the blood pressure on every candidate for a prostatectomy. In following this procedure, it is not infrequent that we pick up symptomless renal calculi, diverticuli, bladder calculi, strictures, and cancer, any one of which might be overlooked, were this routine not followed, thereby changing a good prognosis to a more doubtful one. As Dr. Rosenkranz has said, one cannot depend solely upon laboratory test. The patient must feel good, and have a good moist tongue, as well as a good kidney function and blood chemistry.

In spite of the fact that many brilliant results have been obtained with the one-stage suprapubic prostatectomy, I am in favor of the more conservative two-stage method. It has been my observation that the patients operated upon by the two-stage method have, as a rule, as short a convalescing period as those that have the one-stage operation. It is a fact that most of the poorer risks receive the two-stage method, so why not conserve the strength of the patient in better condition also, for he will usually make a much better convalescence. A vasectomy done at the time of the suprapubic cystotomy will eliminate the embarrassment of an epididymitis when the catheter is replaced in the urethra. I have had patients tell me that they suffer more with an epididymitis than with a prostatectomy. Just recently it became necessary for me to do an orchectomy one month after the patient had left the hospital and had a normally functioning bladder. The patient developed an epididymitis, which broke down and had to be opened twice. Abscesses continued to form until the sloughing epididymis and testicle were removed. This would not have happened had a vasectomy been performed at the time of the suprapubic cystotomy.

Dr. Rosenkranz's method of controlling hemorrhages by packing the prostatic cavity and bladder at the time of operation is absolute. As Dr. R. V. Day has said many times, after packing the bladder you can go home and sleep, without fear of hemorrhage. It is true that this procedure is painful, but unless the wound is sutured too tightly I do not believe it is any more painful to the patient when the pack is removed than when a bag used for the same purpose is removed, and it does control the hemorrhage. There is no question about that. A small pack in the prostatic cavity, unless held by a sponge holder strapped by adhesive to the belly wall, or by a catheter through the urethra, is, I believe, dangerous, for a hemorrhage of any moment will usually carry the pack to the fundus to obstruct the outflow of urine and blood through the incision, allowing the bladder to fill up with blood clots. Dr. Rosenkranz's rule of packing the bladder of all cases that have very large prostates, and of those who show a tendency to bleed at the time of the operation, is a very safe and conservative method.

I am of the opinion that the spinal anesthetic is by far the safest anesthesia for both stages. I have found many patients who are more afraid of being put to sleep than they were of the operation, and who would submit readily to the operation if they could escape a general anesthetic. I believe the majority of cases will make a better convalescence following spinal than following any other form of anesthesia.

I have found that the tube put in the wound for drainage at first when a pack is not used should be large.

Nothing under one-half inch in diameter should be considered. When the pack is removed, such a tube should be put in for a few days. As soon as all gross evidences of hemorrhage have subsided, the two-inch tube may be readily replaced by a Pezzar catheter, which will not retard healing of the wound during the following ten days, allowing the prostatic cavity to heal unmolested. At the end of ten days a catheter can safely be inserted through the urethra, allowing the suprapubic wound to close.

DOCTOR ROSENKRANZ (closing)—The reason that I have stressed close observation and safeguarding of the myocardium is that there has not been evolved a satisfactory measurement of cardiac reserve. The spirometer does at times, however, seem to be of some use in checking up this most important factor. I take daily blood pressure readings post-operatively, and keep the pressure at a satisfactory level with pituitrin and strychnine.

As regards mercurochrome irrigations, it is well to bear in mind that mercurochrome is mercury, the daily administration of which may cause a local sclerosis, so that I would not recommend it for continued daily usage.

The reason why some cancers are of very slow growth or have their growth arrested following their partial removal, or why some of them even get well spontaneously following such removal, is not known. I have discussed the subject with Dr. Percy, and he has noticed that occasionally patients have gotten well following partial removal with either the knife or the cautery.

Dr. Day and Dr. Jacobs have advocated the suture of the capsule in cases of bleeding. About three years ago, on inserting my finger through the suprapubic incision into the prostatic urethra prior to enucleation, I felt a large artery pulsating in the urethra. The artery was almost one-half centimeter in diameter, and was palpated by Dr. Crane and the resident urologist of the General Hospital. I expected a lively hemorrhage, and got it. It was, however, immediately and completely controlled with the bladder pack. I have never found it necessary to resort to any other expedient. The pack does occasionally cause some pain. This can, however, be satisfactorily controlled with morphine, and I have had some patients in whom a tight bladder pack has not caused pain. I learned the bladder pack from Colonel Freyer. During the International Congress of Surgeons in London in 1914, I saw him remove the two largest prostates that I have ever seen. The blood spurted and welled out of the suprapubic wound in each case, as was to be expected. He immediately packed the entire bladder in each case with a five-inch roll, which completely and immediately checked the bleeding. I shall always remember his technic as one of the most valuable points that I have ever picked up, and I believe that, in time to come, this method of packing will be used with increasing frequency. It is safe, sure, simple and immediate in action.

I am glad that Dr. Jacobs stresses preliminary roentgenological, blood chemical and cystoscopic examinations, for, although the laboratory sometimes misleads us, it does at times give us a danger signal that would otherwise have been withheld.

As regards the danger of embolism following an enema, I may add that I use a soft catheter and that nothing has afforded my patients greater relief after operation than has the enema for removal of gas. Colon tubes I have found to be absolutely inadequate. I believe that many cases of so-called embolism have been something else. I have known of patients to pass out while straining at stool, and while sitting up in bed eating a meal. Both cases were attributed to embolism, but there was no post mortem. I have had one case of infectious embolism that recovered. Ten years ago I removed a very large prostate, together with a large calculus from a patient who had had a large prostate removed perineally some years previously. His bladder was very badly infected. About three days after operation I found him with a paralysis of the tongue, paralysis of pupils and one side of the face, etc. He also had a putrid and severe pneumonia. It was a case of brain and pulmonary embolism combined. This patient had a wonderful constitution, and is living and well today.

As Dr. Daly has suggested, we must use discrimina-

tion in medication. I have used cod-liver oil, properly emulsified, so as to render it palatable, and I am sure that it has built up the health of certain patients.

I wish to thank Dr. Jacobs, Dr. Day, Dr. Stevens, and Dr. Crane for their good discussions.

Spinal Drainage: Value in the Treatment of Early Poliomyelitis—The data gathered by J. C. Montgomery and W. C. C. Cole, Detroit (Journal A. M. A.), in twenty-six cases of poliomyelitis strongly suggest a possible beneficial effect on the outcome of the disease to be derived from early and repeated subarachnoid drainage. Vomiting was noted as the predominating initial symptom. Fever was the symptom complained of in thirteen cases. Headache was noted relatively rarely, although at some time during the course of the disease it was present in 70 per cent. Pain was noted in only 54 per cent. Fever occurred in every instance, and vomiting was noted in 60 per cent of the cases. Some redness or injection of the tonsils or pharynx was noted in practically every instance and persisted from one to two weeks after the onset of the illness. This was a matter of varying intensity; in some cases there was only a mild redness and in others a severe angina, the hyperemic area extending up into the nasopharynx, where a grayish-white exudate was almost invariably seen. Hyperesthesia was noted in every instance, although it, too, varied considerably in its intensity. Irritability was observed in about one-half the cases, although it was somewhat more constantly present in the early ones. Of the clinical signs, aside from hyperesthesia and pharyngitis, those most constantly present were neck rigidity and resistance to anterior flexion of the spine, these signs being found in 92 per cent of all cases, or in all but two. The reflexes were most unproductive of information in early cases. They were found normal, exaggerated, sluggish and, absent. The most that could be learned from them was that only in rare instances were they normal, and in one or two instances a difference between the two sides was of some help in arriving at a diagnosis. In two cases erythema of the face and neck was noted, and in one instance a definite punctate scarlatiniform eruption was present over the chest and back. This rash was so suggestive of scarlet fever that such a diagnosis was held probable, particularly in view of the severe angina that was present, and the absence of meningeal irritation. It was only when paralysis occurred that the true nature of the illness was recognized. Estimates of spinal fluid pressure were based on experience regarding rate of flow. While the pressure apparently varied in its intensity, nevertheless it was definitely increased in every instance except two, and these were beyond the acute stage. Similarly, the amount of fluid was increased in every instance except one. The degree of pleocytosis varied from 10 to 800. In some instances, when puncture was performed in the extremely early stage, practically no increase was detectable. It was a frequent experience that the cell count was higher on the second, third and fourth days of meningeal invasion than on the first day, even in the face of definite improvement symptomatically. This led to the conclusion that in those instances in which an extremely large amount of spinal fluid under great pressure is found, a cell count of 10 or 15 should be regarded, in a child at least, as a definite increase. It seems logical to assume that this low count at the first puncture may partially be explained on the basis of dilution. It has been the authors' practice, as soon as a diagnosis of poliomyelitis was suspected, to perform a lumbar puncture. If this showed definite increase in pressure, with or without a pleocytosis, it was repeated at twelve or twenty-four hour intervals until the pressure had definitely subsided. This usually occurred in about three or four punctures, and it was the usual experience that after pressure had once subsided it did not recur.

From the present study of the data supplied by the school districts it is estimated that about 12 per cent represents the amount of defective vision found among school children in the United States *under the present methods of examination*.—National Committee for the Prevention of Blindness.

Clinical Notes and Case Reports

ALLERGIC DERMATITIS

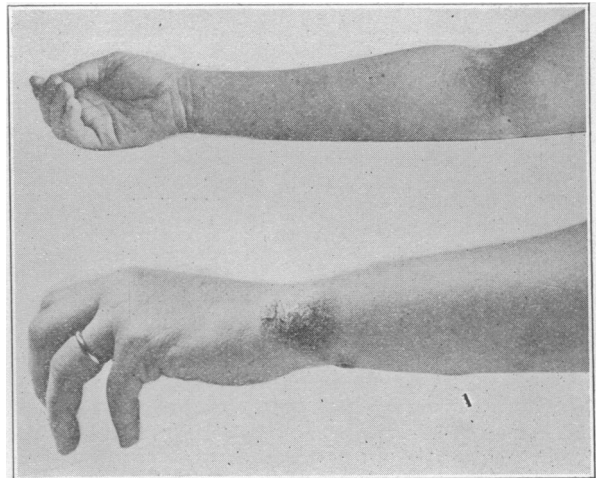
REPORT OF A CASE DUE TO MOHAIR

ALBERT H. ROWE, M. D., AND HOBART ROGERS, M. D.,
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Mrs. E. C. L., age 32, came to us May 26, 1925, complaining of an eczema which had for two years affected both forearms. The lesions when they first appeared had had a marked weeping tendency, but at this time were dry and scaly. Itching was a marked feature. The distribution of the lesions is shown in the accompanying unretouched photograph. At no time had lesions appeared on any other part of the body.

The condition had been treated previously by means of the lotions, ointments, and diets commonly prescribed by dermatologists. At one time the patient had for four months not allowed water to touch her forearms. The use of x-ray had served to control the weeping tendency, but had really benefitted the condition very little.

There was a positive history of allergy. The patient's mother had had hay-fever as a child. The patient her-



self had had hay-fever in her youth while a resident of Ohio. Her one child, 10 months old, had had eczematous lesions at the age of 3 months.

Food-testing by the cutaneous scratch method revealed only delayed reactions to raspberry, apricot, and banana, which reactions we felt were probably without significance. Tests with animal emanation proteins revealed immediate positive reactions to goose feathers, cattle hair, horse hair, dog hair, rabbit fur, sheep wool, and a marked reaction to goat hair.

The marked reaction to goat hair led to careful questioning as to contact with mohair. The patient then remembered that she had received a mohair upholstered overstuffed chair on January 25, 1923, that her eczema first appeared the first week of February following, and that the only period of improvement she had had was six weeks spent away from home.

Our instructions were to remove this chair from her home and to avoid allowing her skin to come in contact with any mohair, animal fur or wool. Improvement began about June 15 and continued uninterruptedly to the complete disappearance of the lesions, despite the fact that she had gone to the beach and was bathing in salt water every day. Her arms have now been entirely free